

PART 162-01 INTRODUCTION

01-01 PURPOSE

The Rivers Policy and Classification Plan is a guide for action to protect and enhance the quality and the use of Rhode Island's rivers and waterbodies. Under the Rhode Island Rivers Council statute (R.I.G.L. 46-28-3), rivers are defined as “a flowing body of water or estuary or a section, portion, or tributary thereof, including streams, creeks, brooks, ponds, and small lakes.” The Rivers Council includes reservoirs in the definition of rivers and defines estuaries as the tidal portions of rivers and the coastal ponds.¹ Its approach is holistic; it endeavors to integrate water quality planning with land use planning and with planning for activities such as recreation and habitat preservation.

The Plan is intended to provide clear, integrated, affirmative guidance for the management and protection of Rhode Island's river and estuarine watershed resources at the state and local levels. Its broad objectives are to protect drinking water supplies and pristine rivers, to encourage recreational use of rivers, to foster the creation of greenways, and to provide for the clean-up of rivers.

Preserving and improving water quality are vital. High-quality drinking water supplies are critical to public health, and habitat areas are essential to biological diversity. As a practical matter, both drinking water supply and habitat quality depend on the maintenance of water quality at the highest possible level. Furthermore, good water quality is necessary for recreation, since contact with polluted water is a health risk.

Nonpoint sources of pollution have now replaced point source pollution from industrial and municipal wastewater treatment discharges as the major threat to Rhode Island's water resources. Significant mitigation of these nonpoint source threats can be fostered through the implementation of best management practices such as establishment of buffers and stormwater management systems, and the creation of local wastewater management programs.

Existing programs and statutes provide an array of means to preserve and improve the quality of Rhode Island's rivers, lakes, ponds, and estuaries. Implementation of such measures needs to occur at the grassroots level and be coordinated on a watershed basis. Public education is a critical component to success. The people of the community must be concerned about the quality of water resources if their general protection is to be secured. While state programs are invaluable tools, the

¹ The policies and classifications included in this document pertain to rivers as defined in this section. The words lakes, ponds and estuaries are inserted from time to time in the text for emphasis. These words to not change the broad coverage of the policies and classifications.

Rivers Policy and Classification Plan provides a means to coordinate state programs with local action.

01-02 RHODE ISLAND RIVERS AND WATERSHEDS - AN OVERVIEW

Rhode Island's rivers and their associated watersheds, including those of lakes, ponds, reservoirs, wetlands, aquifers, and estuaries are vital resources. They supply the drinking water on which the population depends. They provide critical habitat to support biological diversity. Along with adjacent land, they are greenways of open space and support diverse recreational opportunities. The quality of life in Rhode Island is dependent on its river and estuary systems.

From a global perspective, Rhode Island is a small metropolis, an urban place of approximately a million people. Although much open space exists, all land has been fragmented, developed, or impacted by human activity; there is no wilderness. Agricultural and industrial uses of rivers have declined and the principal contemporary uses of rivers are now water supply, habitat, open space, and recreation. Rhode Island's rivers no longer support a commercial fishery.

Over time, Rhode Island's rivers have changed. Through the Colonial and Federal eras they supported an anadromous fishery and provided waterpower for small mills. In the nineteenth century they supplied power for the textile industry. In the twentieth century they were developed as public drinking water supplies and became areas of natural habitat, open space, and recreation for a rapidly suburbanizing population.

To understand Rhode Island's rivers, lakes, ponds, and estuaries, it is helpful not to look at them individually, but to consider how the overall system of rivers and watersheds functions. Rhode Island's rivers and estuaries, and their watersheds, meet different, important, and in some respects competing needs. What must be improved, preserved, and better managed is the overall system.

A brief survey of the state's watersheds is instructive (see Figure 162-01(1)). The Pawtuxet River watershed contains the state's primary source of drinking water, the Scituate Reservoir. Through the Providence Water Supply system, it serves 60 percent of the state's population. The Big River offers a potential and important groundwater supply reserve.

The Wood-Pawcatuck watershed, with more than fifty miles of canoeable waterways, is a major recreational resource. It is also a sole source aquifer; the groundwater from municipal and private wells provides drinking water to much of southern Rhode Island.

The Blackstone River Valley is the birthplace of the industrial revolution in the United States. Lakes and ponds, which were created to maintain water flow for industrial

power in the western portion of the watershed, have become places of recreation. In the eastern portion they are drinking water supplies for the textile mill cities of Woonsocket, Pawtucket, and Central Falls.

The streams in the rocky uplands of western Rhode Island that drain into the Quinebaug River in Connecticut, have once again become pristine because of reforestation. The rivers in the East Bay area and the streams and ponds on the state's larger islands are important sources of water supply although limited in quantity and vulnerable for their quality.

In urban areas, rivers play an increasingly important role as corridors of open space and recreation. The recreation potential and open space value of the Pawtuxet, the Woonasquatucket, the Blackstone, the Runnins, the Ten Mile, and the Saugatucket Rivers, and their estuaries are being explored and developed in a manner that will improve the health and amenity to the communities through which they pass.

01-03 RECOMMENDED WATERSHED TERMINOLOGY

The term “watershed” can be simply defined as “the area of land² that drains to the outlet of a lake, stream, ocean, or other waterbody. All land is in one watershed or another; large watersheds can be subdivided into smaller watersheds.”³ It is this aspect of subdivision, or “nesting”, that can become a source of confusion because the term is used without consistent size discrimination. Use of a common terminology to describe the nested and relative sizes of successively smaller areas will help. In order to minimize confusion, maintain consistency, and establish a national Watershed Boundary Dataset, the U.S. Geological Survey (USGS) created the Hydrologic Unit Code (HUC) System that was eventually expanded upon by the Natural Resource Conservation Service (NRCS). The HUC is a simple numeric method of designating drainage basins by size. Larger drainage basins have fewer numbers in their code than smaller drainage basins. This concept is more fully explored on the following page. This is this system that forms the basis for recognizing watersheds in this Plan. The following explanation of watersheds and the HUC system is adapted from an article by Bruce P. McCammon of the USDA-Forest Service.

My spouse and I own a great set of mixing bowls that takes little room on a shelf because they all nest nicely inside each other. The problem with these bowls occurs when one of us asks the other to “hand me a bowl, please.” We can quickly determine if the need is for the “biggest” or the “smallest” bowl but selecting among the others usually requires pointing and head shaking. We have no standard terminology for the range of bowls in our set. Much the same problem exists with respect to watersheds. Using the bowl method, we

² technically, watershed encompass not only the land but the waterbodies as well

³ Rhode Island Watershed Approach Framework, June 1999

can often communicate with each other adequately by simply referencing "bowl" or "watershed." Often, however, it is necessary to be more specific about the size or scale of nested "containers" in order to communicate effectively. The terminology used to reference "watersheds" is not standardized and often creates a miscommunication when people do not share the same sense of scale for a given watershed term.

Technically, a watershed is the divide separating one drainage area from another (Chow, 1964). The term "watershed" is commonly used to refer to an area; specifically, the area in which all surface waters flow to a common point. A great deal of confusion and misunderstanding is created by the inconsistent use of terms to describe the relative size of watersheds-basin, watershed, drainage, and catchment. Use of the term "watershed" to describe the area drained by the Blackstone River as well as the area drained by the Nipmuc River is technically correct - it just does not provide insight to the fact that the Nipmuc is one small tributary to the Blackstone River. One way to minimize the confusion is to use a consistent set of terms that is based on established systems for subdividing large watersheds into smaller ones. The preferred terms presented here - Region, Subregion, Basin, Subbasin, Watershed, and Subwatershed - are consistent with the common interpretation of relative watershed size.

REGION

The USGS recognizes twenty-one major geographic Regions. Each Region is assigned a two digit Hydrologic Unit numeric code. Rhode Island is located in the New England Region (HU code 01).

SUBREGION

The USGS further subdivides these Regions into Subregions. Nationally, there are 222 Subregions. The numeric code for each of the subregions is composed of four digits, two digits each for the Region and Subregion. Rhode Island is located primarily in the Massachusetts-Rhode Island Coastal Subregion (HU code 0109) along with a small area in the Connecticut Coastal Subregion (HU code 0110).

BASIN

The USGS divides Subregions into yet smaller areas, resulting in 352 nationally recognized Basins. The numeric code for each Basin is six digits long. Rhode Island is located primarily in the Massachusetts-Rhode Island Coastal Basin (HU code 010900) along with a small area in the in the Connecticut Coastal Basin (HU code 011000).

SUBBASIN

The smallest subdivision in the USGS hierarchy is the Subbasin. There are 2,149 Subbasins within the U.S. The numeric code for the subbasins is eight digits long and is composed of four two-digit fields, the first six representing the larger hydrologic units in which it rests. Rhode Island contains all, or portions of, five Subbasins: Cape Cod Subbasin (HU code 01090002), Blackstone Subbasin (HU code 01090003), Narragansett Subbasin (HU code 01090004), Wood-Pawcatuck Subbasin (HU code 01090005), and the Quinebaug Subbasin (HU code 01100001). Subbasins are included in Table 162-01(1).

WATERSHED

The USGS hierarchy does not continue subdividing or provide terms for areas smaller than the Subbasin. However, the Natural Resource Conservation Service, expanding upon the work of the USGS, continued the process of subdivision into smaller hydrologic areas. Referred to as HUC-10's from the fact that they are signified by a ten-digit code, Rhode Island contains all, or portions of, fifteen Watersheds (see Table 162-01(1)).

SUBWATERSHED

As with the previous classifications, Watersheds can be further be subdivided into smaller units called Subwatersheds. Referred to as HUC-12's from the fact that they are signified by a twelve-digit code, Rhode Island contains all, or portions of, fifty-five Subwatersheds (see Table 162-01(1)).

There is one very important caveat that the U.S. Environmental Protection Agency notes in its Definitions/Reference document entitled *Watersheds*. EPA recommends "delineating a watershed area should correspond to the purpose or the goal for its use." Accordingly, while the Rivers Council wishes to follow HUC delineations as much as possible, it reserves the right to consider other factors for the purpose of recognizing local Watershed Councils. There are portions of the state, notably its islands and coastal areas, where the actual hydrologic boundary would not be conducive to organizing local support for the watershed.

Table 162-01(1)

HYDROLOGIC UNIT TABLE FOR RHODE ISLAND

Subbasin Code / Name	Watershed Code / Name	Subwatershed Code / Name
01090002 Cape Cod Subbasin	0109000205 Rhode Island Sound – Gooseberry Neck to Sakonnet Point	010900020502 - Westport River - Noquochoke Lake tomouth 010900020503 - Rhode Island Sound - Richmond Pond to Sakonnet Point
01090003 Blackstone Subbasin	0109000302 Lower Blackstone River	010900030202 - Clear River 010900030203 - Chepachet River 010900030204 - Branch River 010900030205 - Mill River 010900030206 - West to Peters River 010900030207 - Millers River 010900030208 - Peters River to mouth
01090004 Narragansett Subbasin	0109000404 Ten Mile River	010900040401 - Ten Mile River
	0109000405 Woonasquatucket and Moshassuck	010900040501 - Woonasquatucket 010900040502 - Moshassuck
	0109000406 Pawtuxet River	010900040601 - Big River 010900040602 - Flat River Reservoir 010900040603 - South Branch 010900040604 - Regulating and Moswansicut Reservoir 010900040605 - Ponagansett and Barden Reservoirs 010900040606 - Scituate Reservoir 010900040607 - North Branch 010900040608 - Pocassett River 010900040609 - Pawtuxet River Mainstem
	0109000407 Palmer River	010900040702 - Barrington and Warren Rivers
	0109000408 Lower Taunton River	010900040802 - Assonet River 010900040803 - Quequechan River 010900040804 - Taunton River - Mill River to mouth
	0109000409 Narragansett Bay	010900040901 - Seekonk and Providence Rivers 010900040902 - Upper Narragansett Bay 010900040903 - Greenwich Bay 010900040904 - Hunt River 010900040905 - Mount Hope Bay 010900040906 - Upper West Passage 010900040907 - Upper East Passage 010900040908 - Lower West Passage 010900040910 - Sakonnet River 010900040911 - Coastal Aquidneck

Table 162-01(1)
HYDROLOGIC UNIT TABLE FOR RHODE ISLAND (con't)

Subbasin Code / Name	Watershed Code / Name	Subwatershed Code / Name
01090005 Wood-Pawcatuck Subbasin	0109000501 Wood River	010900050101 - Upper Wood River 010900050102 - Lower Wood River
	0109000502 Upper Pawcatuck River	010900050201 - Chipuxet River 010900050202 - Queen River 010900050203 - Beaver River 010900050204 - Upper Pawcatuck River 010900050205 - Pawcatuck River Mainstem
	0109000503 Lower Pawcatuck River	010900050301 - Ashaway River 010900050302 - Shunock River 010900050303 - Lower Pawcatuck River
	0109000504 Southwest Coastal Waters	010900050401 - Pettaquamscutt River 010900050402 - Saugatucket River 010900050403 - Point Judith Pond 010900050404 - Southwest Coastal Waters 010900050405 - Block Island
01100001 Quinebaug Subbasin	0110000103 Five Mile River	011000010301 - Upper Five Mile River
	0110000105 Moosup River	011000010501 - Upper Moosup River 011000010501 - Quaduck Brook 011000010501 - Lower Moosup River
	0110000106 Pachaug River	011000010601 - Upper Pachaug River

Figure 162-01(1)

Figure 162-01(2)

01-04 RHODE ISLAND RIVERS COUNCIL

The Rhode Island Rivers Council was created by law in 1991 because Rhode Island did not "have an affirmative, clearly articulated program to manage and protect its rivers and watershed resources." The legislative findings continued: "State jurisdiction over rivers, environmentally, culturally, and economically is scattered among various state agencies, and in some instances state policies and plans are conflicting" (*Section 46-28-2, General Laws of Rhode Island*).

The General Assembly also found that "many of the rivers of Rhode Island or sections thereof and related adjacent lands possess outstanding aesthetic and recreational value of present and potential benefit...." The General Assembly declared that the preservation and protection of these rivers, lakes, ponds, estuaries, and their immediate environment together with their significant recreational, natural and cultural value is...a public policy...and it is in the public interest to:

- 1) preserve open space, natural resources and features, and scenic landscapes;
- 2) preserve cultural and historic landscapes and features;
- 3) preserve opportunities for recreational use of rivers;
- 4) encourage the establishment of greenways, which link open spaces together;....

The Rivers Council was established "for the purposes of coordinating, overseeing, and reviewing efforts to improve and preserve the quality of rivers and to develop plans to increase the utilization of rivers throughout the state" (*Section 46-28-4, General Laws of Rhode Island*). The Council is a public body, an agency of state government, with an authorized membership of 15 persons.

The basic functions of the Rivers Council are to prepare a rivers policy and a classification plan for adoption as elements of the State Guide Plan and to give formal recognition to local watershed councils. Additionally, the Council has a responsibility to make recommendations to state agencies, cities, and towns regarding rivers, lakes, ponds, and estuarine issues, and "to foster public involvement in river planning and decision making processes."

In 1992, the Rivers Council assessed conditions in the state's major watersheds. From this review, the Council found that "there is a wealth of solid information about rivers in Rhode Island," that "overall the state's rivers are not severely threatened and, in some highly significant instances, water quality is improving. Yet, the state's rivers are not as well protected as they might be, especially from a watershed perspective. Gradual degradation of their quality remains all too possible." The Council concluded that additional regulatory programs were not needed, "but the challenge is the better, more effective integration of existing programs and authority" (*Rivers Council, Annual Report for 1992*).

In 1993, the Rivers Council developed draft classifications for surface fresh waters for most watersheds in the state. The draft classifications were presented at a

series of informal, regional workshops held in the spring of 1994, and revised based on comments provided by the participants. The public workshops were held in Central Falls for northern Rhode Island watersheds, in Barrington for East Bay watersheds, at the Providence Water Supply Board in Scituate for central Rhode Island watersheds, and in Richmond for South County watersheds.

In 1995, digital maps of the eighteen watersheds were prepared utilizing the Division of Planning's Geographic Information System. The maps illustrate the rivers' classifications developed by the Rivers Council. In the fall, citizens were given the opportunity to review and comment on the maps at a public workshop, as well as at a joint meeting held with the Rhode Island Greenways Council. In 2003, the 'Basins' map was revised to include all coastal watersheds previously omitted in the 1995 map and to delineate the smallest watershed areas (subwatersheds) by the Hydrologic Unit Code-12 (HUC-12) that are covered by the Rivers Policy and Classification Plan.

A subcommittee of the Rivers Council held numerous meetings in 1996 with various watershed representatives to review the river segment classifications. The meetings also provided the opportunity for the Council to define the relationship between its work and Department of Environmental Management (DEM) water quality classifications. Segment characteristics and the plan's policies were adjusted and refined in a subsequent plan revision. The plan was also formatted as an element of the State Guide Plan.

In 1998, the Rivers Council developed policies for recognizing local watershed councils and it became clear that the fresh water watershed areas described in the *1998 Rivers Policies and Classification Plan* were incomplete. Rhode Island is a coastal state, and the tidal portions of the riverine watersheds (including estuaries) are important to local interest groups. The Council formed a Classification subcommittee who worked closely with DEM and the Rhode Island Coastal Resources Management Council (CRMC) to develop classifications for the tidal portions of the watersheds. In 2002, CRMC asked the Rivers Council to adopt their classifications for the tidal sections of the watersheds. This is reflected in these 2003 revisions.

The *Rivers Policies and Classification Plan* is a product of multiple years of effort, with extensive public involvement. Throughout its work, the Rivers Council relied on numerous parties including local citizens concerned about, and often experts with regard to, conditions in their watershed; state agencies, especially DEM and the Division of Planning; federal agencies, especially the Natural Resources Conservation Service of the Department of Agriculture; environmental organizations, riverwatch, river monitoring programs, outdoor recreation associations, and local planners. The Rivers Council has worked to synthesize existing efforts and different interests and perspectives of these various groups and disciplines.

With respect to interstate coordination, the classification of river segments at the state boundaries of Connecticut and Massachusetts was coordinated with the appropriate state agencies and/or watershed organizations. Comments were solicited in conjunction with the public hearing process undertaken by the Rivers Council and State Planning Council prior to adoption of the Plan.